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The Journal of Philosophy

THE FUTURE OF PHILOSOPHY AS A UNIVERSITY STUDY

At a recent discussion of the merits of a certain candidate for an important academic position the writer mentioned as one of his qualifications that he was a man of a philosophical temper of mind. At this one of those present, a distinguished scientist of large experience in university administration, was seen to smile and look knowingly at his colleagues. On observing the look of surprise which this attitude called forth in the speaker he leaned over to him and whispered, "Perhaps you don't realize it, but among us such a description would hardly be taken as a recommendation."

Am I wrong in thinking that this attitude is typical of an estimate of the value of philosophy as a university study which is far more widespread than philosophers like to think? Not all devotees of the physical sciences are so outspoken as Ray Lankester when in his preface to Mr. Hugh Elliot's book on "Modern Science and the Illusions of Professor Bergson," he frees his mind as to "those who in a thoroughgoing way occupy themselves in collecting and comparing and classifying all the absurdities which have been put forward as 'metaphysics' or 'metaphysical speculation.'"[1] But it is not too much to say that to many serious men of science the group of studies with which the philosophical department of our universities is concerned is regarded as a luxury rather than as a necessity, legitimate for those who have the time to give to such things but not worthy any longer of the structural place in the organism of university study which in their introductory lectures as to the nature of philosophy all philosophers with one accord claim for it.

It would seem worth while, therefore, to raise again the question as to the place of philosophical study in the modern university and to ask ourselves what we may fairly expect it to do for us and how far this expectation is justified by its present performance. The discussion at the last meeting of the Philosophical Association showed that, in spite of Professor Woodbridge's emphatic disapproval, not a few philosophers feel the need of redefining their work in its larger relations and demonstrating if they can to a world whose conscience shows it to be singularly callous on questions of unemployment, that they at least have a right to exist.

To this larger question I propose to make no direct contribution.

[1] Pp. vii, viii.

I shall content myself with one particular phase of it, namely, that which concerns the future of philosophy as a university study. Why is it not more highly esteemed? Who is to blame, the students or the professors in other faculties or the teachers of philosophy themselves? Or is the present situation due to a complex of different factors, each of which has contributed its part?

Into the diagnosis of the case I do not propose to enter at length for it appears in the last analysis to be a very simple one. It is one more case of specialization run to seed. Philosophy, as its name implies, started out as the quest of wisdom. It was the attempt to give a comprehensive survey of the great questions that affect human life and destiny, to appraise their relative importance and as a result of this analysis to determine the standards which should regulate conduct. This original conception which makes philosophy a cultural study concerned with meanings and values has been superseded for the most part by another which makes it a science among sciences, namely, one part, not the most interesting by any means, of the history of human thought.

It is not hard to understand how this has come about. Two different interests which the philosopher shares with other men have gained an undue control of his time and thought and diverted his energies to a greater extent than he himself often realizes from what ought to be his central interest. We may call these the trade interest and the game interest. First of all, the trade interest. Like all professionals who live by their trade the philosopher feels the need of showing that there is some particular thing that he can do that nobody else can do, in order to justify the salary which he draws. But wisdom is too subtle and evasive a thing for any man to claim a monopoly of it and in these days of multiplying sciences the man who would include all knowledge in his field would find himself a candidate for an insane asylum rather than for a professor's chair. One after another the special subjects which made up the stock in trade of the older philosophers have set up in business for themselves, religion, politics, history, law, the study of the physical universe itself in all its varying manifestations, most recently psychology. Logic, ethics and esthetics still remain but they, too, have given warning and may depart at any moment. Wherever he goes the philosopher finds the field already tenanted. What can he offer to justify his existence and prove his right as a man of science to sit in the councils of the scientists? The answer which the teachers of philosophy have given is as original as it is inevitable. They offer as their special subject matter the history of philosophy itself. Grant, if you will, that the scientists have more and more been elbowing the

philosophers out of their jobs. Let us tell in detail the story of how the elbowing has been done and make of the telling of it a job of its own for which we can claim right of way over all competitors. So the history of philosophy, in the sense of a detailed study of the successive formulations of the different problems with which the philosophers of the past have been concerned, has become the special stock in trade of the professional philosopher, and when men speak of philosophy as a university study, it is this of which they think first of all.

And the other interest which accounts for the present attitude toward philosophy I have called the game interest. It is an interest that we all share to greater or less degree, but which in the philosopher takes a peculiar and original form. It is the interest of doing a thing for the sake of showing how well you can do it, irrespective of the end to be accomplished by the doing of it. In the philosopher it is the interest of thinking for thinking's sake, of defining and redefining, analyzing and reanalyzing, controverting and recontroverting, not for the sake of getting anything in particular accomplished by this elaborate paraphernalia but for the sake of showing that you are cleverer than the other fellow at the game you are both playing. Anyone who has attended meetings of philosophers when they were discussing such subjects as the theory of knowledge will understand what I mean and will not find it hard to comprehend why scientists smile when men are commended to their favorable attention on the ground that they possess the philosophical habit of mind. It was not a chemist or a physicist, but one of the ablest of contemporary German philosophers who described metaphysics as "the systematic misuse of a terminology that had been invented for the very purpose of being misused."

Now I should be the last to say a word against either of these two interests. They have their place in life and they have their place in philosophy, but I submit that of themselves they are not capital enough on which to run the business of philosophy in a modern university. For philosophy as a university study has a service to render, the importance of which it is difficult to overestimate, yet which at the present time, for the reasons which I have mentioned and others which might be added, is not being fully performed. It is the old service with which philosophy began, the service of teaching men how to look at things in the large and to establish standards by which to measure values and appraise differences. This, I repeat, is something which was never more needed than today. It is needed in the world at large where issues are constantly being joined on irrelevancies and men fight for

causes which they do not understand. It is needed above all in the university in those precious years when young men are waking up to the possibilities of thought and with the tree of knowledge before them and only four or five years in which to pluck its fruits must choose either intelligently or ignorantly which to take and which to leave.

For the disheartening thing about the situation as we see it today is that while teachers of philosophy in their pursuit of the lesser ends of which we have been speaking have allowed their original and major interest more and more to fall into the background there has been no one else to take their place. We have seen that the present difficulty with philosophy in our universities is specialization run to seed, but it would be a mistake to hold the philosophers responsible for this. What has happened to them has been happening to everybody else. We have all been too busy to see things in the large and to think whole thoughts. We have been immersing ourselves more and more in our narrow group interests, disciplines as we call them in our academic lingo, until the university has become an epitome of the larger world, a place where vested interests fight for their own rights because there is no one to stand for the rights of society as a whole. This vacant place the philosopher should fill. He should concern himself with those larger interests which belong to humanity as a whole. It is his function to interpret men to one another. But what hope is there of his furnishing such a unifying influence in the world at large if he is unable to unify that smaller group of men who by their very profession are committed to the pursuit of knowledge?

In particular there are three groups of men in the university to whom the philosopher has a responsibility. These are, first, the rank and file of undergraduates who do not expect to specialize in philosophy; secondly, those students, undergraduate or graduate, who specialize in philosophy because they expect to teach it; thirdly, his colleagues in other departments who are interested in the bearing of their subjects upon the larger questions of meaning and value with which philosophy is concerned.

The second of these groups I can pass over with a word, for they bulk largest in the time and thought of philosophical teachers. Most courses in the department are planned with them in view and in these courses the two interests to which I have already alluded find full scope for their exercise. This is entirely legitimate provided they do not crowd out other and more important matters and provided the needs of other groups are not neglected. What these needs are I desire to consider somewhat more in detail.

And first of the undergraduate who studies philosophy for cultural purposes, or would study it if he knew what it could do for him. What ought we to expect his course in philosophy to do for him? Two things at least it ought to give him, the power to think independently and the ability to differ intelligently.

First, the power to think independently. In a sense this is the purpose of all university study, but in other departments the primary object is the acquisition of a particular body of knowledge and the training in correct thinking that results is a by-product. In philosophy one faces the ultimate questions which push thought to its farthest limits, such questions as the nature of reality, the test of truth, the meaning of beauty or of goodness or of life itself. How shall one deal with these permanent questions of the soul that recur from age to age, that transcend nation and race, that find their expression in the masterpieces of literature and art because they appeal to something which is essentially human? What shall we think of the different answers that have been given to these questions by those who have thought about them before us? What shall be our attitude to those whose answers to these great questions differ from our own? Above all, how shall we gain a sympathetic understanding of the conflicting ideals whose struggle age after age in ever new and baffling forms makes up what we call the history of civilization?

As to just what the questions are with which such a general cultural course in philosophy should concern itself, there will doubtless be difference of opinion. It is enough to say that they should be questions which have to do with standards and values and the grounds on which our acceptance of such standards and values must rest,—such questions as the meaning of life, the nature of personality, the mystery of evil, the function of the state, the ideal for society, the existence of God. These are questions which every man must face just because he is man and which he will face intelligently or blindly according to the help which comes to him through the experience of those who have faced these questions before him. Many attempts have been made to draw the line between science and philosophy. Professor James, it will be remembered, drew it between our answered and our unanswered questions. "Philosophy," he says, "has become a collective name for questions that have not yet been answered to the satisfaction of all by whom they have been asked."[2] I suggest as an alternative the following, "Science is the name we give to the group of studies which deals with those questions the answer to which we can be

[2] "Some Problems of Philosophy," 1911, p. 23.

content to take at second hand. Philosophy is the name that we give to the study which deals with those questions the answer to which each man must give for himself." In the past religion has been our most direct point of contact with these questions, a very natural one, for religion is the one interest which concerns itself with man's total nature. Other studies deal with this or that special interest, but religion deals with life as a whole. What is the meaning of life? What is one's place in the world? What is the nature of the ultimate reality on which one depends? What is the source of the influences which divide and distract, and what hope is there of being able to overcome them? These are the great questions of religion because they are the great questions of life and because they are the great questions of life they are the great questions of philosophy. It is the business of philosophy to meet the student at the point where life raises these questions for him, to point out the possibilities on the one hand and the other, to bring him such help as the experience of the great men of the past may have to offer and so help him to the point where he can make his own answer or decide that for him, at least, no answer is possible.

But these great human questions do not meet us in the abstract as problems of purely theoretical interest. They take the form of rival theories which have embodied themselves in institutions and in parties. They meet us in such great facts as the Roman Catholic Church, the German Empire, the English Labor Party, the Third International, big business and the like. What are these but philosophies incarnate? Underlying all practical conflicts of fact are conflicts of theory, none the less logical because often unconscious. Philosophy ought to help the student to understand these conflicts and to take his place on one side or the other intelligently, knowing what he does and why he does it.

And not intelligently only, but sympathetically. For these old antitheses are not arbitrary but have their roots in deepseated tendencies of human nature and the man who would intelligently adjust himself to the complex life of our time must learn not only to understand but also to sympathize with the view which he himself opposes and rejects. Such sympathy—the power to see with the other man's eyes, to reduce the point of conflict by the elimination of all irrelevancies, to maintain the sense of human brotherhood unbroken, in spite of difference—this spiritual attitude it is the function of the university to foster, and of all the studies of the university it is philosophy which must do this.

But not the disembodied philosophy that often goes by that name, the philosophy which has cut loose from its roots in fact.

As religion furnishes the natural point of approach to the first group of interests with which philosophy deals, so history, taking it in the large to include the study of society in the making, affords the point of contact with the second. And as a matter of fact, if we ask where philosophy in the sense in which we have defined it above is actually being taught to-day in our universities, we find that it is in the classrooms that deal with history, and the group of special sciences with which the historian is most intimately concerned, such as sociology, political science and law. For it is in these studies more than in any others in the university that the point of view of the whole dominates and the questions of values and of standards with which philosophy is preeminently concerned hold the center of interest. What philosophy must do for the university student is not to set up a rival study to compete with those who are teaching religion and history and law and other similar subjects in a philosophical spirit, but to provide that unifying point of view which will enable the student to utilize to the full that which they have to give him.

And yet I realize that in saying this I have unduly narrowed the field. It is true that religion and history furnish the most natural point of contact with philosophy because they are studies which in their very nature emphasize the larger view, but there is no single one of all the studies of the university which does not at one point or another raise the ultimate questions, and there is no teacher worthy of the name in whatever classroom he may be sitting who does not at some point teach philosophy. Literature is but the attempt to interpret, in simple and intelligible language, the convictions by which man lives. Art is but the presentation in plastic form of the ideals of the spirit. Physical science itself, when conscientiously studied, leads inevitably to philosophy. For the scientist is a man as well as a scientist and the more eminent he is in his science the more inevitably will he feel the pull of the great questions which physical nature no less than history and religion put to the soul of man, the question of the whence and the whither and the why. Great conceptions like development, the struggle for existence, the origin of species to which the detailed study of the biological laboratory leads reach out almost imperceptibly into those larger unanswerable questions which are the concern of philosophy. No philosophy can hope to be adequate or satisfying which draws its material from a part of the field only, which does not make use in its final synthesis of the contributions which come from all the sciences. The true faculty of philosophy in the university of the future will not be the professors of ethics or of metaphysics or of

the philosophy of religion alone, but the group of philosophically minded men in all the departments who are thinking each of them in his own way of ultimate questions.

But that faculty still needs to be organized. In all the departments men are thinking philosophically, but they are thinking in isolation. Some of them are not even aware that they are philosophizing at all and not a few would resent having the name philosopher applied to them. And yet they are doing the very things which we have seen philosophy ought to do. This isolated work ought to be correlated and the correlation may well be the responsibility of the university department of philosophy. As the philosophical classroom ought to be for the undergraduate student a clearing house of the different ideas which come to him from the different classrooms, so the philosophical department ought to be for the faculty as a whole a clearing house of the different theories and problems which emerge in the varied fields of university research.

An illustration of what I have in mind is the recent Seminary on Jurisprudence, given by Dean Pound of the Harvard Law School under the Department of Philosophy and Psychology of the Faculty of Arts and Sciences of that University. Of this course Professor Perry writes as follows: "It is a graduate Seminary course open only to specially selected individuals. The object of the course is to discuss the topic of Jurisprudence, not merely from the strictly legal point of view, but also in its philosophical, psychological, sociological, economic and political aspects. The presence of representatives of diverse branches of knowledge makes this possible. It is a more or less deliberate experiment in the direction of breaking down the artificial boundaries which divide departments of the University. All of the members agree in regarding the Seminary thus far as a pronounced success. It is developing more and more fellow-consciousness and mutual understanding. We are all beginning to think that something of the sort should be done in future years with perhaps some other teacher to lead the discussion."

Why have we waited so long for the giving of such a course as this? Why is not the kind of thing that the Harvard philosophers have asked Professor Pound to do the kind of thing that the philosophical department of all our universities should be asking of the philosophically minded men in all the more important branches of study?

Partly because the philosopher has not conceived his own task broadly enough, but also and even more because of our faulty conception of the nature and function of university departments.

The department of philosophy has been thought of as a group of men who were to do things which in the nature of the case they could not do well alone, rather than as a means for bringing together all the men in the university who were actually doing the work which an ideal department of philosophy should do. The ideal department of philosophy, I repeat, should consist of the philosophically minded men in all the faculties under the chairmanship of a man whose business it is to see that the proper correlation is made between them. Such a department should, of course, include a chair or chairs to provide for teaching the technical matters concerning the history of human thought with which the history of philosophy as at present taught is primarily concerned. But the teacher of the history of philosophy need not necessarily be the chairman of the department. He might be a teacher of law, or of history, or of literature, or of comparative religion, or, for that matter, of physical science, provided only he were a man with philosophical insight and vision and the power to unite men in pursuit of a great and worthy ideal.

To follow out in detail what would result from the acceptance of such a program would lie beyond the scope of this paper. It might lead to the postponement of the present course in the history of philosophy to the graduate school or its restriction to the little group of men who desire to choose that for their specialty in life. Or it might result in the reconstruction of that course so as to fit it for the large group of men who ought to be introduced to the study of philosophy who do not now take it. It would certainly mean the provision of a new course or courses dealing from the undergraduate point of view with individual and social standards and drawing its illustrations far more intimately than has been the case in the past from the materials which are furnished to the students in other courses. It might be well for the time being to banish the name philosophy altogether and to offer courses with such titles as "Contemporary Civilization," "Comparative Standards," "Fundamentals of Religion" and the like. The main thing to do would be to get men thinking about big questions and to get them thinking together.

More difficult still would it be to secure the needed cooperation in the more advanced branches of the subject. One would have to feel one's way slowly and by degrees. Professor Perry's suggestion of a joint Seminary opens one fruitful line of progress. Another would be the giving of public courses of lectures in which different departments should cooperate, dealing with the philosophical aspects of the different studies concerned. It would be

desirable to provide as far as possible within each main subject of study some course which had to do with the relationship of that special study to the larger human problems of which we have been speaking. I take it that this is what Professor Woodbridge had in mind at the recent meeting of the Philosophical Association when he said that what philosophy needed above all things was not more discussion of what philosophy should be or do, but fruitful work at those concrete problems which meet us on every hand and which clamor for solution. But whatever the method followed in detail, the main thing to be aimed at should be that the men who in their different fields are working out the big human problems should be brought together so that their minds should be fructified by contact and the bearing of the work of each be seen in its relation to that of all the rest.

This would require, no doubt, a radical change in present university policy and ideals. It would mean the breaking down of the hard and fast line of partition between the different departments and the abandonment of the conception of a discipline as a vested right, which is the most unfortunate of all our legacies from the German educational system. But what is philosophy for if not to break down barriers and reveal hidden unities. Organization is after all only a by-product. All beginnings take place in the mind, and if only the philosophers conceived their work in a large enough way there is nothing in the world of practice which they might not ultimately hope to accomplish. They might even work that miracle of miracles of making the university again a place where reflective thought about the ultimate problems should be regarded as the most important work that a man could do, and mind meet mind in common quest of life's supreme values.

WILLIAM ADAMS BROWN.

UNION THEOLOGICAL SEMINARY.

THE VALUE OF THEORIES

THE human mind is an incorrigible maker of fiction, whether it be in science or poetry. Theories have always sprung as spontaneously from man's imagination as have fairy tales. Indeed the myths of primitive races are at once theories and fairy tales. But to the sophisticated scientific consciousness, proving a theory is very different from painting a skilful and elaborate imaginative picture. If a theory is a fiction, it is at least a rational fiction as remarkable for its adherence to facts as for its departure from them.

The aim of theorizing is usually thought to be the discovery of truth—truth about the inner relations and structure of the natural world. A scientific fairy tale must be true, or at worst highly probable. Its truth, or probability, is reached by inductive inferences from the facts of experience as they appear in every-day life or in laboratories. Such is the ordinary statement of the logicians.

Is this account of the proof of the truth, or probability, of theories by a peculiar method of reasoning—the inductive method—adequate? A closer study of what a theory is, of how it is related to fact, and of what human interests it fulfills, suggests a different conclusion. The truth of a theory is its least important value; the proof of its truth, or even of its probability, is doubtful; and the peculiar method of reasoning known as induction is not at all a distinct type of logical process; it reduces wholly to deduction.

We state our conclusions first, and shall elaborate them by an analysis of the elements which give value to any theory, which make it a *good* theory.

Theorizing is at once a practical and a fine art. A theory is a useful tool by means of which man can mold nature to his will. It is also an intellectual object with a beauty and a value peculiarly its own. Like a poem or a painting, it seeks more than the transcription of fact. It is a reflective effort to see beneath the surface.

Theories share beauty with the products of the fine arts. The elegance of a body of scientific propositions, its orderliness, simplicity and completeness are a kind of beauty in the abstract. The system can be grasped, as is a work of art, in a single mental intuition. The praise of the beauty of ideas goes back to Plato, and in modern thought pours fervently through the essays of Mr. Bertrand Russell. Esthetic values appear both in the mathematical and physical sciences, and are a bond of union between them.

The pragmatists have directed attention to the utility of theories. But this is the sole element of value which they have found in them. It is perhaps the least fundamental. The purely intellectual interest which compels men to theorize is largely detached and disinterested. It is like Spinoza's intellectual love of God, where God is the whole spectacle of existence. The usefulness of theories is secondary and derived. Their primary value is the satisfaction they give to that "independent hunger of the mind" which is curiosity.

Hence the value *par excellence* which distinguishes theorizing from the fine and the practical arts is something other than utility or beauty. Theories explain. A theory goes behind the given fact to build a scheme in which the given fact will fit, and by the aid of which it will be understood. Theories make experience intelligible.

A good theory *may* have utility and beauty; it *must* have explanatory value.

We may ask, then, what makes a theory an explanation? On this question the whole discussion will hinge.

A theory takes on explanatory value when it is linked to fact by its logical consequences. To explain is to deduce. Man has a predilection for deduction; the essence of rationalization is the construction of deductive systems. To have deduced a proposition from some other proposition known to be true gives a strange satisfaction to the inquiring mind; and when a theory yields this satisfaction it is intellectually valuable. Conversely, if a theory has no true consequences it has no explanatory value. It is then a figment of the imagination, a veritable fairy tale with a doubtful title to existence.

The search for antecedents and consequences goes on wherever thought goes on. In the mathematical and physical sciences the process is essentially the same; and everywhere antecedents have or have not explanatory value according as they have or have not true consequences.

Paradoxical as it may seem, it is only true propositions which demand explanations. A false proposition is disposed of once and forever. But a true proposition stands as a challenge before the knower with the question, "Why am I what I am?" Science begins with fact, with true propositions about fact. From what is known here and now it extends its theoretical picture into the uttermost realms of space and time and beyond the sensory threshold of the most delicate perceptions and sensitive instruments. The known is explained in terms of the unknown. The hypothetical becomes the ground from which the actual is deduced.

Generalization is the first and most natural step toward theory. Indeed a generalization is a kind of elementary theory, since it is hypothetical. It is the premise of a small deductive system. Like all hypotheses a generalization is (1) never completely verifiable, and (2) it yields deductive consequences. If *all* objects of a certain class behave in a certain manner it follows that any particular object of the class which appears in experience will behave in this manner. So long as this deductive consequence is true, the generalization will have explanatory value; but if the consequence is false, if there are exceptions to the law or the generalization, it will cease to be valuable. It must then be corrected.

Since all the objects of the class to which the generalization applies do not appear in experience, the generalization is an imaginative construction. It goes behind and beyond experience. It is not

a description of any entity which is wholly known. We can point only in imagination to *all* living creatures or to *all* chemical substances.

A usual kind of explanation is causal explanation. The cause is that from which the effect can be deduced. At first the cause may not be thought of as the logical antecedent of the effect, but merely as its temporal antecedent. The naïve philosophy of causation assumes that because *A* precedes *B* and is temporally contiguous to it, *A* therefore causes and explains *B*. But a temporal antecedent is quickly generalized into a logical antecedent, and this gives rise to a less naïve explanation. *A* can cause *B* only if *A* uniformly precedes *B;* only if it is an invariable antecedent of *B*. So that the causal connection becomes a logical connection—if *A*, then *B*—in which the notions of temporal succession and contiguity are secondary. The one event becomes an explanation of the other because the interest in deducing one from the other is satisfied.

But the paradise of the theorist lies beyond generalization and natural law. He has yet to create a deductive system into which his generalizations and natural laws will fit as consequences. Simple generalizations and empirical natural laws have so little of the element of theory in them that they are usually thought of as fact rather than theory. They are the mere beginnings of explanation, the raw materials of the wider structures which are theories proper. To the "why" the answer is always "why." The theorist now aims at relating laws to one another, at unifying systems by deducing them in a body from more primitive and inclusive premises. And this leads him into the thin world of conception and assumption, where the scientific imagination finds itself most free. Since deductions can always be made in a great variety of ways and from a large number of different premises, the scope for human ingenuity in inventing deductive unifications in any scientific field is unlimited.

Hence, in the realm of pure theory, the problem of evaluating theories will have a double aspect. The scientist will ask himself not only what possible explanations can I offer, but what is the best of all possible explanations? And so, to the criterion of value in theories—that the theory yields true deductive consequences—we must add a criterion of relative value. This will be the completeness or incompleteness of these consequences. The elegance and simplicity, of which we spoke as esthetic values, will be secondary criteria of relative value.

The completeness of a theory is its capacity to give by deduction all the particular and general propositions in a widely extended field of knowledge. The theory which explains all is better than the

theory which explains only a part. The Newtonian mechanics, for instance, allows the deduction from a few premises not only of Kepler's laws of the motions of the planets and Galileo's laws of falling bodies, but also a complete set of mechanical theorems which on other non-deductive evidence are believed to be true. For this reason the Newtonian theory is of the highest value. But the explanatory value of the mechanics of Einstein is perhaps even greater. It is a completer theory. Whereas Newton restricts himself to motions whose coördinates are fixed, Einstein considers motions whose coördinates are themselves in motion in every conceivable way, and finds "that the laws of physics are independent of any conventional system of coördinates, but can be expressed truly in all."[1] Einstein's theory is completer and more valuable than Newton's for another reason. "By combining the principle of the relativity of motion with the principle of the absolute constancy of the velocity of light, Einstein was able to achieve the highest technical triumph for which all the physicists of the past had sought in vain, to wit, unification of the whole of physics. The attempts to unify physics by deriving the laws of electricity and optics from those of mechanics had definitely failed, and the converse efforts to explain the fundamental facts of mechanics such as inertia on the basis of electricity were not universally satisfactory. Einstein achieved the unity of mechanics and electricity, the two divergent branches of physics, by subordinating both to the same group of transformations and showing these transformations to have the highest heuristic value in both branches."[2]

We shall not belabor the point by illustration. The test of value in theories is everywhere the same—do they yield true consequences? And the better theories are always those which are the most complete. This is true equally of theories of society and theories of the structure of matter; it holds in political economy as well as in astronomy.

The deductive systems of mathematics and logic are also, from some aspects, explanatory theories. Modern analyses lead us to believe that the relation of a logical or mathematical system to the facts of experience is not important. From certain primitive ideas and primitive propositions—postulates, we may call them—deductions are drawn. The primitive ideas and propositions are chosen for reasons of convenience and elegance in exposition; they need not be true; the question of their truth is beside the point. They

[1] Morris Cohen, "Some Philosophic Aspects of the Principal of Relativity," a paper read before The American Philosophical Association meeting in New York, December, 1920.

[2] *Ibid.*

need only be simple, independent and consistent. And the theorems deduced from them need have no application to the world of our experience. They are commonly said to be merely possibilities; and the procedure by which they are reached is a method of exploring the realm of possibilities. But a deductive system which purports to be a system of logic, of geometry or algebra—which, in short, purports to be anything other than a pure deductive system with no application—does have among its consequences a large number of propositions which we believe to be true quite apart from their place in the system. Thus, a system of logic will somewhere state, either as postulate or theorem, the law of contradiction; a system of Euclidian geometry will include the proposition that parallel lines do not intersect; a system of algebra the rules of multiplication and addition. The knowledge of algebra, geometry and logic which comes to us in experience does embrace these propositions; they appear to be facts in our experiential world. We are not in need of any logical or geometrical or algebraic theory to convince us of their truth. But we are in need of rationalizing them, or fitting them into a system; in short, of explaining them.

Those deductive systems of mathematics and logic whose aim is to analyze certain generally accepted mathematical or logical truths by deducing them from simple, consistent and independent postulates, are explanatory theories. Those mathematical and logical systems which have no factual interpretations, which remain within the realm of the possible without touching the actual, are not explanatory. Their consequences as well as their premises belong to the imagination. Nowhere have they a foot upon the earth. There is nowhere in them a proposition which we can know to be true in fact, hence there is nothing to be explained.

So we may say there exist explanatory and non-explanatory deductive systems. The physical sciences build explanatory deductive systems. The mathematical sciences build both explanatory and non-explanatory systems. But there is no vast gap between the method of physics and mathematics, as those who oppose inductive to deductive logic suppose.

It is well enough to speak of explanatory value, of utility and elegance; but, it will be asked, what of the truth of these theories? The single indispensable value of any theory, it will be said, is truth. An untrue explanation is worse than none. This truth, which is so frequently demanded of theories, is of a rigid kind—logical inferability from true premises. The principle of induction, for which many philosophers have sought in vain, is supposed to assure it.

The difficulty in proving the truth of theories arises from two

sources, (1) their generality, and (2) the use of non-empirical entities as terms in them. If theories were not general, if they did not intend to apply to all cases, future and past, near and remote, and to all possible experiences, we might verify them immediately within the finite life of the race. But to confine a theory, to restrict its generality, is to impair its completeness, and hence to lessen its value. Yet the facts on which a theory is built are always particular. The problem of how to pass from a restricted to an unrestricted area, from " some " to " all," has been the classic difficulty of inductive logic. Even if this problem were solved, the other would remain. Non-empirical terms figure importantly in many of the best theories. The world of atoms and of luminiferous ether is quite beyond experience. If we are to prove that propositions about such entities are true, and if we are to establish theories in their total generality, we must resort to something less direct than an appeal to experience.

The answer is inference. We must *infer* the truth of our theories. The failing prop of inductive inferences has been the principle of the uniformity of nature, variously named the principle of causality and the principle of sufficient reason. As applied to the passage from " some " to " all " the principle may be stated thus: every particular proposition can be so qualified that it can be truly generalized. Now, if this were so, we should still be completely at a loss to know what qualification of a particular proposition would make it a candidate for true generalization. We could never be sure that we had added the proper qualification. My test tubes may show me, for example, that hydrogen and oxygen follow Boyle's law; but further experiments will also show that *all* gases, including hydrogen and oxygen, follow Boyle's law only on the qualification that they remain within certain limits of temperature and pressure. But the principle of uniformity can not assure me that this *is* the one and necessary qualification upon which I can generalize the law. In terms of natural law the inductive principle becomes: every fact or event in experience exemplifies some natural law. What law? The principle leaves us in the dark. As applied to propositions about the non-empirical entities which enter into so many theories the principle would say: there is a structure underlying immediate experience which is its true structure. But what is this structure? Atoms? Or the *élan vital?* This question the principle leaves unanswered.

As an aid to inductive inference, the principle of uniformity is nothing more than a pious hope. We may consider it an expression of man's desire to rationalize experience, to find a sufficient

reason from which the present fact will follow, to construct an explanatory theory. But the desire that there shall be a theory, law or generalization does not establish the truth of any theory, law or generalization. The principle may be, as has been suggested, simply a vast lie.[3] "Nature imprints in our minds," says a recent writer, "the conception of universal uniformity in order to blind us to the fact of the absolute incoherence of events—a fact which is obvious to everyone but a scientist."

Is there any other principle which will make it possible strictly to infer the truth of theories? Certainly we can not infer from the truth of the consequences of any proposition that the proposition, itself, is true without violating the principle of inference or formal logic. We can infer only that which is strictly implied, and a theory is not strictly implied by its consequences. It is indeed possible strictly to infer that a theory is false; this follows as a rigid deduction from the falsity of its consequences. But the truth of the theory can not be so reached from the true propositions upon which it is built.

It is impossible to assert that no principle of inductive inference which will assure the truth of propositions inferred by it *can be* discovered., But it can be said that no such principle has been discovered. Meanwhile, theories remain imaginative constructions whose truth lies beyond fact and logical inference.

The constructions of the theorist can be brought within the area of the true and the inferable only by enlarging the concepts of truth and inference. If truth means artistic truth, fidelity to the canons of good taste in theorizing, as truth in poetry is fidelity to standards of poetic beauty, a theory may then be called true when it exhibits the values of which we have spoken—elegance, utility, and explanatory value. But this is not the truth of every day experience, of prose and fact. It is the truth of fabrication and good artistry. So, also, if inference be freeing the mind to roam among possibilities and to choose the most fitting, theories are then inferred from their premises. But this is not the inference of strict logic with proceeds from true premises by implications to true conclusions.

Probability is often suggested as a substitute for truth in theories. Theories can, indeed, be said to have probability in a vague sense, where probability means scientific value in general—credibility, admissibility, a generic name for the values of which we have spoken. But a numerical probability calculated on an enumeration of cases of truth and falsity can scarcely be intended.

The conclusions of this brief study of theories are twofold. (1)

[3] R. Demos, "Lies and Liars," *The Yale Review*, January, 1921, p. 382.

The chief value of a scientific construction is that it explains experience by making it a consequence of a deductive system. Explanatory value is sufficient to a theory; truth, in the sense of factual truth or inferred truth, is not established and is not a necessary value. Indeed, those qualities which make a theory a good explanation, generality and penetration beneath fact, are the very qualities which stand in the way of proving its truth. The proof of a theory is the proof of its general value as a scientific construction, and this is something other than its truth. (2) Further, there is no extraordinary type of logic which can be called inductive logic. The traditional distinction between induction and deduction is specious. To prove that a theory has scientific value is to make it the center of a deductive system the logical consequences of which ramify widely into experience. The processes involved do not differ from those by which any other logical system is built; rationalization in the physical sciences is of the same type as rationalization in the mathematical sciences. The intellectual interest in system-making is always an interest in deduction.

If there is any principle of induction it is this: free the imagination to build a deductive system which will yield the truths we know by experience. This is not a postulate of proof, but a counsel of action; and it would apply equally to those mathematical analyses which take their departure from commonly accepted mathematical truths. Human reason is of a single texture wherever its threads extend. The inductive and deductive methods coalesce.

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REVIEWS AND ABSTRACTS OF LITERATURE

The Group Mind. WILLIAM MCDOUGALL. American Edition. New York: G. P. Putnam's Sons. 1920. Pp. xxii + 413.

This volume bears the sub-title, "A Sketch of the Principles of Collective Psychology with Some Attempt to Apply Them to the Interpretation of National Life and Character." Collective psychology has for its subject-matter the mental life of groups. It is, therefore, a part of the more general science of social psychology, which embraces both the mental life of groups and that of individuals in their social interactions. The author's previous work, *Introduction to Social Psychology*, he explains (p. 2), is not a treatise in social psychology but merely an introduction to it. In *The Introduction to Social Psychology* the author was merely laying the foundation for his social psychology, the first instalment of which has now

appeared. The relation between the two books is further discussed by the author as follows: "The main theme of my earlier work was that only through increase of knowledge of others is each man's knowledge of himself slowly built up and enriched, until it renders him capable of enlightened self-direction. So the main theme of this book is the development of the group mind, the increase of its self-knowledge and of its power of self-direction through increase of knowledge of other human societies" (p. 408).

The book has three parts, and an introduction. In the introduction, after defining group psychology and its relations to kindred sciences, the author defends the concept of the "group mind" against the attacks of Mr. Maciver, who, McDougall claims, makes the mistake of identifying the group mind with a "collective consciousness." Mr. McDougall's other predecessors in the field of social psychology are then more briefly disposed of: Aristotle, Hobbes, Locke, and the Utilitarians on the ground that "they all begin in the effort to describe what ought to be; and incidentally give some more or less fallacious or fantastic account of what is, merely in order to support the normative doctrines" (p. 5). LeBon, Sighele and Marie are disposed of on the ground that they deal only with the lower forms of collective life and hence "are concerned chiefly to point out how participation in the group life degrades the individual" (page 27). Fouillée is about the only one of his predecessors who gets much recognition. The Germans he regards as mere stumbling-blocks, and even though his philosophy is very similar to that of the German idealists, he wants it distinctly understood that no credit is due the Germans, with the possible exceptions of Fechner and Lotze (p. xiv). (Even the author has a group mind!)

Part I is entitled "General Principles of Collective Psychology." It consists of a discussion of the levels of cooperation, taking on the one hand the temporary emotional life of a crowd and on the other the highly organized and genuinely "mental" life of a patriot army. The crowd has no group mind, for its psychological bond is purely emotional, but as cooperation becomes more conscious and purposive the group spirit or group self-consciousness becomes more evident and more effective. By the group-spirit is meant here the "knowledge of the group as such, some idea of the group, and some sentiment of devotion or attachment to the group" (p. 92) on the part of each member of the group. According to McDougall there are five principal conditions which make possible a highly developed form of collective life: (1) "some degree of continuity of existence of the group"; (2) "some adequate idea of the group" "in the minds of the mass of the members of the group" about which group

sentiments may gather; (3) "interaction of the group with other similar groups"; (4) "a body of traditions and customs"; (5) "organization of the group" (pp. 69 ff.). When these conditions are present the self-regarding sentiment of each member becomes extended to the group as a whole and thus "binds the group together and renders it a collective individual capable of collective volition" (p. 78). It is this sublimation of the self-regarding impulses into other-regarding impulses which is primarily responsible for the elevating effect of collective mental life. A person is usually conscious of his membership in more than one group; this McDougall calls "multiple group-consciousness." Such a person finds himself elevated to a great degree both morally and intellectually by the interactions among his groups. The author then attempts a classification of groups—a classification, however, of which he makes little use. Groups are natural and artificial. The natural groups are those rooted in kinship, or in territorial or occupational contiguity. The conditions making for natural groups have mainly been destroyed, so that most modern groups are artificial. Artificial groups are of three kinds, purposive (*e.g.*, a social club), traditional (*e.g.*, caste), mixed (*e.g.*, state or church). The description of the interaction of these various groups might well occupy most of the book, and would be a valuable contribution to social psychology; but unfortunately it is very brief and superficial. And consequently "the principles of collective psychology" are difficult to find in the book. The observations noted above, about the importance of the group spirit for collective life, are true enough, and were surely well-known long before the *Introduction to Social Psychology* was heard of. The terminology is new in spots, the exposition is elaborate and repetitious, but the ideas can be found in Aristotle, Hobbes or Mill in spite of their supposedly "normative doctrines." But to call these the "Principles of Collective Psychology" strikes me as excessively eulogistic. Or perhaps this is really all that there is to be said on "collective psychology," and perhaps each generation needs to have the old truths dressed up in the latest style. Perhaps people will understand it better if, instead of saying public-mindedness is a virtue, we say that a highly organized group depends for its progress on the extension of the self-regarding sentiments to the whole group.

Part II is entitled "The National Mind and Character," and consists of an analysis of national life from the standpoint of the ideas of Part I. The essential conditions for collective mental life enumerated above are here applied to nations. A certain degree of racial, geographical, and mental homogeneity, freedom of communi-

cation, leaders, continuity, and a more or less well defined purpose are all necessary to the existence of a national mind; and it is the existence of a national mind which is the most essential element of nationality. Mr. McDougall is now prepared to draw an analogy between the individual and the nation, not as biological organisms, however, but as "contractual organisms" (p. 241), or *mental organizations.* Nations vary in their mental organization much as individuals do. "The organization of some peoples is wholly the product of the conflicts of blind impulses and purely individual volitions working through long ages," (p. 206) as *e.g.*, the old China; "Of other nations the organization is, in part only, a natural growth, having been, in large part, impressed upon it by an external power" (p. 207), as *e.g.*, Russia under the autocracy of the Tsar. "Another type of national organization results when the natural evolution of the national mind and character has been artificially and unhealthily forced by the pressure of the external environment of a people, when the need of national self-preservation and self-assertion compels the mass of the people to submit to an organization which is neither the product of a natural evolution through the conflict of individual wills, nor the expression of the general mind and will, nor is altogether imposed upon it for the individual purposes of the few, but is a system planned by the few for the good of the whole, and by them imposed upon the whole. This is the kind of organization of which a modern army stands as the extreme type and which is best represented among modern nations by Germany as she was before the War" (p. 209). A nation reaches the fullest development of nationhood when it attains a self-conscious will, just as an individual finds his fullest self-realization in a unified and self-conscious will. "We might place nations in a scale of nationhood. The scale would correspond roughly to one in which they were arranged according to the degree to which the public good is the end, and the desire of it the motive, of men's actions; this in turn would correspond to a scale in which they were arranged according to the degree of development and diffusion of the national consciousness, of the idea of the nation or society as a whole; and this again to one in which they were arranged, according to the degree of intercourse they have had with other nations" (p. 229). Among the higher nations, therefore, the welfare of the nation is valued by its members more than their individual welfare or even the welfare of any one generation of the nation. Patriotism is thus a natural outgrowth of the national mind, and is "psychologically justified." Similarly the great ideas which dominated national minds may be evaluated according to their power to destroy or to

build the nations. Ideas such as world-conquest, caste, asceticism have proved "ineffective to sustain national vigour or to promote social evolution" (p. 251). Less harmful ideas have been those of personal loyalty to the ruler, and of ancestor worship. But "the four ideas, liberty, equality, progress, and human solidarity or universal responsibility, seem to be the leading ideas of the present era, the ideas which, in conjunction with national sentiments, are more than any other, fashioning the future of the world" (p. 254).

In Part III the author takes up "the consideration in a general way of the processes by which national mind and character are gradually built up and shaped in the long course of ages" (p. 275). This according to McDougall is the crowning task of collective psychology. It is the "genetic psychology of nations" or a scientific philosophy of history (p. 147). The evolution of the national minds or character is discussed under three heads: (1) the evolution of innate racial qualities (both moral and intellectual); (2) the evolution of national traditions or civilizations; (3) the evolution of social organizations. That there are innate moral and intellectual differences between the races, McDougall holds to be indisputable. He surveys rather superficially the speculations on the prehistoric "race-making" period; speculations which are highly confusing since they throw little light either on how one may discover which moral and intellectual traits are innate and which not, or on what the various specific innate racial traits are. We are led to believe, however, that there must be such differences though we may not be able to tell what they are. The arguments for changes in innate racial qualities during the historic period the author naturally finds less convincing. He believes that practically all historic changes of national mind must be explained by the influences of tradition rather than racial factors. The early progress of the nations is to be explained by the stimulating effects of racial crossings, and of the conquest of the nations by peoples of older civilizations. But progress before the last thousand years was slow or else unstable because of a fundamental defect in social organization, which characterized all ancient nations, *viz.*, the caste system. As long as it was maintained the liberation of the mind was impossible. Obversely, the chief causes of progress during recent times have been the breaking up of custom, the stimulation of free inquiry, and the weakening of the power of the state over the individual. Only as intercourse with and between nations becomes free, can national minds and characters develop on a firm basis.

This is a bare summary of the thesis of the book, all the more bare because the book itself abounds in arguments and illustrations

drawn from history and literature in support of this thesis, and to get a just impression of the book these are essential. McDougall touches upon so many different things that the reviewer is greatly embarrassed in being forced to select only a few points for more detailed criticism. The last part of the book, pretending to cover the whole history of man, I shall not even attempt to discuss. The book, it seems to me, would be better without it, for it is far more given to free speculation, prejudice, and irresponsible philosophizing than the first two parts—and of necessity so. A scholar, it seems to me, should not attempt such a task—at least not in less than one hundred and fifty pages. For the rest, I shall merely call attention to a few points that seem fundamental.

In the first place it is impossible to tell what McDougall means by the "group mind." He tells us, for instance, that all he means by the group mind is the consciousness in each individual of his membership in the group. Then again the group mind means the idea which each member has of the group as a whole. In other places he tells us the group mind is something quite apart from the minds of the members of the group; it is the "collective deliberation" which we find in legislatures, *etc.* (p. 271). And in discussing the national mind as a type of group mind, he links it up with national character or traits. The confusion seems to be due to the fact that the author uses the word "mind" in at least two different senses. He defines mind as "an organized system of interacting mental or psychical forces" (pp. 13, 66). (Such a definition, by the way, is usually found among the "exercises" in an elementary text-book on logic, and not in a scientific treatise!) Sometimes he uses the word "purposive" as synonymous with "mental" or "psychical," but his failure to define purpose, except in terms of mind, unfortunately renders the synonym logically useless. But it is clear from this definition that he means by "mind" some sort of "organization." In other places, however, he speaks of mind in terms of consciousness, acts of will, *etc.*, as he did in *Body and Mind.* He distinguishes clearly between the two meanings of "mind" in his reply to Maciver (p. 20). He repudiates the doctrine of a "collective consciousness" in the sense of a super-individual consciousness. "Maciver," he goes on to say, "is under the influence of that unfortunate and still prevalent way of thinking of the psychic as identical with the conscious which has given endless trouble in psychology; because it has prompted the hopeless attempt, constantly renewed, to describe the structure and organisation of the mind in terms of conscious stuff, ignoring the all-important distinction between mental activity, which is sometimes, though perhaps

not always consciousness, and mental structure which is not. The structure and organization of the spirit of the community is in every respect as purely mental or psychic as is the structure and organisation of the individual mind" (p. 20). It is obvious here that McDougall intends to speak of the group mind as a form of social structure, not of activity. But as the book proceeds the distinction is obscured and we soon find McDougall speaking of "national self-consciousness," "group volition," *etc.* (see for example page 214), in a sense which carries him back very definitely to the "consciousness psychology." With such confusion reigning on the meaning of mind, it is inevitable that the term "Group Mind" should have an emotional rather than an intellectual significance.

A similar confusion vitiates the discussion of the relation of collective psychology to individual psychology, and more generally of the group to the individual. The first part of the book is largely devoted to the thesis that man in society behaves quite differently from man in isolation (see for example pp. 13, 62), that the life of the organized group elevates the man above what would be his private or individual level. This seems to presuppose that we know, presumably through the efforts of individual psychology, how human beings act apart from group life. But we obviously do not. The "individual" and his "level" are in this sense pure abstractions. To attribute the moral and intellectual "elevation" of social life to the "group spirit" rather than to the social qualities of human nature, strikes me as a combination of mysticism and propaganda. The "group" as something over and above the individuals composing it is equally an abstraction. And if "collective psychology" has a subject matter quite independent of "individual minds," as McDougall claims, it seems to me to be closer akin to German philosophy than to empirical psychology; and it leads indeed to the same concepts—to a "collective good" which is the good of nobody in particular and to a "general will" which is the will of nobody in particular.

In this connection I want to mention the difficulty I have in understanding a passage like the following: "A nation is essentially the realization of an idea, the idea of a nation; only in so far as the idea of the nation exists and operates in the minds of the members of the nation, controlling their conduct and directing it to actions having reference to the nation as a whole, does a nation come into and continue in existence" (p. 409). It seems to me that there is a great difference between speaking of a nation as the realization of an idea (which is good idealistic philosophy), and speaking of the idea which the members of a nation have of the whole or "national

self-consciousness." I think most of the time McDougall is speaking of the latter, but this is not the only passage in which the confusion occurs. The two ideas certainly do not imply each other. Merely that individuals have an idea of their common nationality does not imply that the nation is the realization of an idea. Similarly I fail to understand the logic of the following passage which McDougall quotes with approval from Barker's *Political Thought in England:* "That [speaking of an Oxford college] group of minds, in virtue of the common substance of an uniting idea, is itself a group-mind" (p. 25). Does Mr. McDougall mean by the group-mind merely a group-of-minds? Then why use such confusing language?

I shall mention only one more source of confusion, and I am speaking now primarily of Part III. Mr. McDougall uses the terms racial and national too loosely. We find him arguing innate racial differences between nations, in spite of the fact that he makes it clear that most nations are a conglomeration of races. And conversely, he argues from national differences, which are for the most part cultural differences, to innate racial differences. Though this is a common confusion, one seldom finds it so thoroughly exploited.

My remarks are intended to suggest that the *Group Mind* is a contribution to idealistic philosophy rather than to collective psychology. The author appears to be interested not so much in clarifying the current confused ideas about group life, as in exploiting these confusions for the sake of a philosophy of mind and of progress. For this reason I make no apologies for reviewing at such length in a journal of philosophy a book on psychology written by a prominent modern philosopher!

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Annales de l'Institut supérieur de Philosophie. Tome IV. Année 1920. Louvain: Institut supérieur de Philosophie. Paris: Librairie Félix Alcan. Pp. 624.

The University of Louvain, which had been one of the victims of Teutonic barbary, comes back to the world with a new life, and offers to the student of medieval philosophy the fourth volume of the *Annales de l'Institut supérieur de Philosophie.*

It is a bulky volume of 624 pages, and consists of a certain number of essays of different lengths, the titles of which are the following: *Aristote et l'éducation. La Morale à Nicomaque. Remarques métaphysiques sur la causalité. La Morale kantienne et l'Eudémonisme. Pestalozzi et Herbart. La Philosophie française à la veille de la guerre. L'Œuvre d'art et la beauté. Le Droit*

international chrétien. Un sociologue catholique, Henri Lorin. L'Idée de Création. De quelques conditions de la Renaissance thomiste.

The first thing which strikes us when we go over these different essays is the number of pages devoted to the study of Aristotle. In point of fact, of the 624 pages of the volume, 218—that is to say, more than one third—is devoted to the study of the Stagirite. No special study is made of any other philosopher previous to the Christian era, although, as was to be expected, in the studies on Aristotle, Plato is often mentioned.

The scholastics of Louvain thereby seem to assert once more that it is to Aristotle we must trace back the scholastic philosophical system, and not to Plotinus, as François Picavet has been teaching for many years. In point of fact, Picavet's brilliant theory does not seem to have gained many adherents. It may be true to a great extent in so far as scholastic theology is concerned, but the philosophical principles of St. Thomas Aquinas are evidently to be traced back to Aristotle and not to Plotinus.

Of special interest is the treatise entitled *"Aristote et l'éducation,"* work of the famous Hellenist Defourny, to whom we owe an excellent work on the economic and political teachings of Aristotle, published in the third volume of the *Annales.* In both of these works, M. Defourny penetrates deeply into the spirit of Aristotle and illuminates with a new light the life of ancient Greece.

A considerable part of the volume is devoted to modern philosophy. We have an essay on Kant, one on Pestalozzi and Herbart, and a short, but very illuminating article on French philosophy at the eve of the great war, in which the author, P. Nevé, makes a thorough analysis of the different elements to which the philosophy of Bergson can be traced back.

The treatise entitled *La Morale kantienne et l'Eudémonisme* is a masterpiece of reasoning and deep thought, and ought not to be neglected by any student of Kant. The author, C. Janssens, exposes in a clear and lucid way the well-known objections of Kant to Hedonism and appears as an irrefutable champion of Hedonism against the author of the *Critique of Practical Reason.*

Among the articles devoted to the exposition of the scholastic principles, we will mention the able essay on the conception of creation, written by A. D. Sertillanges. The scholastic conception of creation had already been exposed by the same writer as far back as 1907 in a work entitled *L'idée de création dans saint Thomas d'Aquin,* which the present work reproduces with very little change.

Both of these works are the ablest expositions of the Thomistic doctrine of creation with which we are acquainted.

We are almost surprised to notice that a volume which probably represents the work of the great neo-scholastic center during the past year does not study any scholastic philosopher except St. Thomas Aquinas. In point of fact, were it not that the medieval philosophers are incidentally mentioned in the article of J. Maritain on the Thomistic revival, we might suppose that St. Thomas was the only philosopher of the Middle Ages.

He is the greatest and the one whose influence has been most lasting but a serious study of the Middle Ages ought to embrace the different writers of that time in their historical setting. It ought to take into account the different elements which have influenced them, and to show how their philosophical principles have made out modern philosophy, and have built our own views of the world. It is in this fruitful and only scientific spirit that medieval philosophy is studied at the Sorbonne, under the able direction of M. François Picavet. In American universities, if scholastic philosophy is studied at all, it is as a mummified system of thought, dead for a long time, unconnected with the philosophy of our day. And thus Descartes appears to us as a creator, who built a system out of nothing, as the true father of modern thought, whereas Descartes is as decidedly a scholastic as St. Thomas Aquinas.

I do not mean that scholastic philosophy is studied at Louvain in such an unscientific spirit. The numerous volumes on medieval writers published by the Institut supérieur de Philosophie, and the able essays on Ockam which have just appeared in the *Revue Néo-scolastique* prove that such is not the case. We simply suggest that in a volume which seems to be representative of the work of the great neo-scholastic center, some study of that kind ought to have appeared.

J. L. PERRIER.

NEW YORK.

JOURNALS AND NEW BOOKS

SCIENTIA. May, 1921. *The Problem of the Variable Stars in its Present State* (pp. 341–344): J. G. HAGEN (Rome).–Most, and perhaps all, periodic variability in the light of stars is due to eclipse by dark companions. But variables of more than four months' period are so different in many respects from short period variables that this explanation is still doubtful in their case. *La contribution que les divers pays ont donnée aux progrès de la physique. I. Physique Newtonienne et Physique de Fresnel-Max-*

well-Clausius (pp. 345–360): ABEL REY (Paris).—Until well into the nineteenth century physics was dominated by the analogy of Newtonian gravitation, centers of force and law of inverse squares. France developed what England originated. Then, in the later nineteenth century came the period of ether media and electro-magnetic forces. England and Germany developed what France originated. *Come la paleontologia rivela l'origine e l'evoluzione animale e vegetale* (pp. 361–370): GUISEPPE SERGI (Rome).—A strikingly interesting paper, maintaining that all the evidence of paleontology, like that of Mendelism, favors a separate origin for distinct species, and tells against transformism. *La Cour permanente de justice internationale* (pp. 371–380): GUILIO DIENA (Turin).—Brief statement of what has been accomplished towards establishing permanent international courts. *Reviews of Scientific Books and Periodicals.*

Guastella, Cosmo. Le Ragioni del Fenomenismo. Volume I. Palermo: Emanuele Priulla Editore. 1921. Pp. 869. Lire 30.

Sorley, W. R. Moral Values and the Idea of God. Second edition. Cambridge University Press. Pp. xix + 527.

Science of Legal Method. Select Essays by Various Authors. Translations by Ernest Bruncken and Layton B. Register. New York: The Macmillan Co. 1921. Pp. lxvii + 593.

NOTES AND NEWS

The fifteenth annual meeting of the American Association for Labor Legislation will be held at the William Penn Hotel, Pittsburgh, on Wednesday and Thursday, December 28–29. The general subject for consideration is "Unemployment, and What Should Be Done about It." The speakers will be announced later. In addition to the main topic, authorities on workmen's compensation will discuss recent important developments in that field. All sessions are open to the public.

M. Émile Boutroux, professor of philosophy at the Sorbonne since 1885, died in Paris on November 22 at the age of seventy-six.

The Revue de Métaphysique et de Morale for 1922 may be obtained for $1.20. Subscriptions may be sent to Professor James H. Woods, 16 Prescott Hall, Cambridge, Massachusetts, who will be glad to collect them and send them to Paris.